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English

ASSISTANCE TO GENERALATEX .

DP/TOG/77/001 .

TOGO .

Terminal report .

Prepared for the Government of Togo
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of Jose C. de Jesus, expert
in rubber processing

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United Nations Industrial Development Organization
Vienna

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ABSTRACT

The project "Assistance to GENERALATEX" (DP/TOG/77/001) is a continuation of project DP/TOG/75/003, entitled "Assistance in the production of rubber articles". Further assistance was deemed necessary in order to train local production staff, to set up a quality control system and to solve various technical problems connected with the tyre production. Project DP/TOG/77/001 was approved on 18 May 1977 with the United Nations Industrial Development Organization (UNIDO) as executing agency for the United Nations Development Programme (UNDP). The project budget provided for a UNDP contribution of \$US 81,980 and GENERALATEX contributed \$US 40,000.

The expert in rubber processing already in the field continued to serve under the new project as of 9 May 1977. The project was scheduled for two years, but the expert ended his assignment somewhat sooner, on 25 February 1979.

Although a number of rubber articles were planned for development, the manufacture of bicycle and motorcycle tyres was concentrated on. These are now widely marketed in Togo as well as in the neighbouring countries of Ghana and Nigeria. The manufacture of cycle tubes was started and a number of them was sold, but their production had to be stopped due to the lack of appropriate facilities. The manufacture of camelback for local consumption and the manufacture of contact adhesive which was started earlier but discontinued because of raw material shortage, is again under serious consideration.

The quality control system for finished products will soon start to operate. Some items of the laboratory testing equipment have arrived.

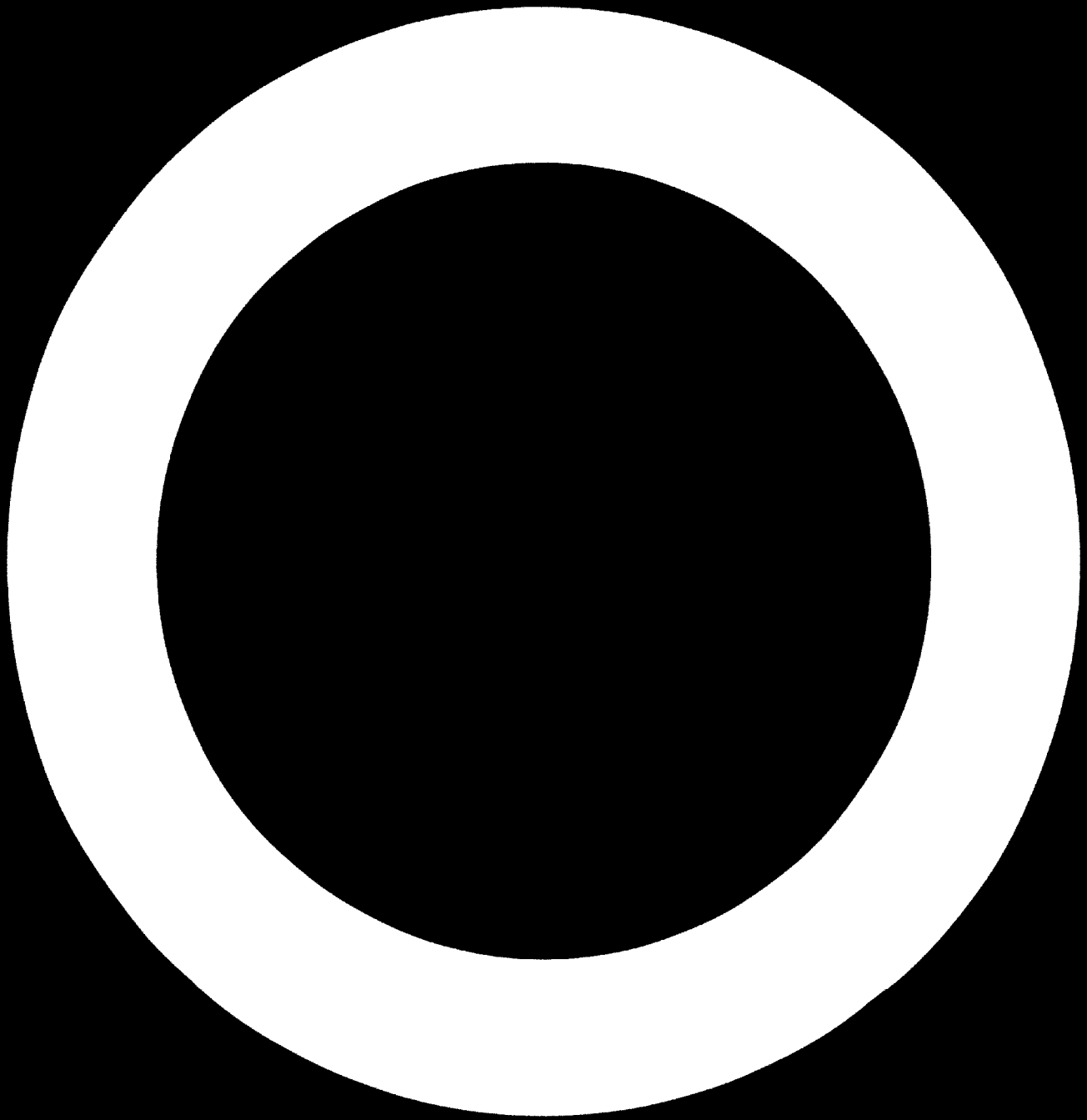
The expert's recommendations include the following:

To overcome shut-downs of the factory which usually are due to a shortage of raw materials and a lack of spare parts, a sound budgetary system should be established and mechanics and electricians for maintenance and repair should be employed

To distribute the workload, the General Manager should receive at least one technically competent assistant

To increase the efficiency as well as the morale and the discipline of the workers, new workers should be selected more carefully, staff rules and regulations should be developed by GENERALATEX and working conditions should be somewhat improved to safeguard the workers' health

To improve the present production of GENERALATEX and to take on new production lines, the expert prepared a list of machinery and equipment which should be purchased



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INTRODUCTION

The project "Assistance to GENERALATEX" (DP/TOG/77/001) which was requested by the Government of Togo on behalf of GENERALATEX was approved on 18 May 1977 with the United Nations Industrial Development Organization (UNIDO) as executing agency for the United Nations Development Programme (UNDP). The purpose of the project was (a) to organize the production and to improve the quality of the products; (b) to find solutions to the technical problems in manufacturing; (c) to continue the training of the Togolese staff in production and maintenance; (d) to search for new products; and (e) to supervise the production.

The project budget provided for a UNDP contribution of \$US 81,980. An arrangement of participation of GENERALATEX in financing the project was concluded between UNDP/UNIDO and the Government of Togo according to which GENERALATEX had to contribute a total of \$US 40,000 from 8 May 1977 to 8 May 1979. GENERALATEX may also expect to receive from UNIDO some necessary laboratory testing equipment for its quality control programme under a different project "Rubber testing equipment" (UF/TOG/77/069).

Project background

The present project is a continuation of project DP/TOG/75/003, entitled "Assistance in the production of rubber articles". When the former project ended after an extension by seven months on 8 May 1977, the task of establishing and starting rubber production by GENERALATEX was completed, but there was still a number of problems to be solved for which further expert assistance was needed. There was e.g. still an acute shortage of trained workers to handle all stages of the processing of cycle tyres, the production of which had just begun. Twelve workers were in the process of being trained, but a total of 36 men was needed. A number of technical problems connected with the production of tyres needed attention and the establishment of a quality control system to improve the quality of the products and thereby placing GENERALATEX in a more competitive position had become a priority.

The expert in rubber processing already in the field therefore continued to serve under the new project as of 9 May 1977. The project was scheduled for two years, but the expert ended his assignment somewhat sooner, namely on 25 February 1979.

FINDINGS

● A. Organization and training of staff

When GENERALATEX began to sell tyres in June 1977, the number of staff was increased from 12 to 36. The staff was split into two teams to man the two shifts. The factory has been operating 16 to 24 hours a day in order to meet the demand.

Only very few of the newly recruited staff members have any factory experience. A great deal of time is therefore needed to train them. There are at present 10 workers who have gained proficiency as far as the production of tyres and tubes is concerned. Complex technical matters are still being delegated to the Manager of GENERALATEX.

B. Quality control

A continuous effort is being made to improve the quality of the tyres. GENERALATEX now uses nylon tyre cord which lasts longer than vinylon tyre cord and has started to replace the grummets by brass-coated bead wires. The composition of the various rubber compounds is being permanently controlled. Unfortunately, variations in the quality of the raw materials, due to the fact that whenever shortages occur the raw materials have to be purchased locally, have led to some difficulties during production and to a degradation of the quality of the finished products.

Some items of the testing equipment ordered for the quality control laboratory have been supplied and installed at the time of writing this report. These items are mainly for testing the rubber compounds while the delivery of the equipment for the testing of the physical properties of the rubber articles has been delayed.

C. Production

Bicycle and motorcycle tyres

Only one size of bicycle tyres, 26" x 1 3/8", was produced at the beginning of the project. The production of a second size, 28" x 1 1/2", was delayed for

several weeks because of technical problems with the mould. The production of two sizes of motorcycle tyres, 19" x 2" and 16" x 2.25", began as soon as the difficulties experienced with the air bars were eliminated. The sale of bicycle tyres was taken up in June 1977 and since that time the factory has operated at least 16 hours per day. There have been occasional shut-downs caused by shortages of raw materials and spare parts.

Since the imports of black tyres to Togo are steadily increasing, GENERALATEX is contemplating to start the manufacture of cream-colored bicycle tyres and of motorcycle tyres with white sidewalls. It can be foreseen that new problems will arise in connection with this new production line. However, efforts were made to improve the present set-up in preparation for this change.

Bicycle and motorcycle tubes

The manufacture of tubes was started in August 1977, but due to the lack of some basic equipment their production was again suspended in December 1977. The impracticability of producing cycle tubes with the existing machinery was demonstrated and proven to the counterpart. The finished product was of poor quality, the production was extremely uneconomical and did interfere with the production of the tyres which were in demand.

Other rubber articles

The machinery and equipment required for the manufacture of shoe soling material, rubber mats and other molded products is not yet complete. The manufacture of camelback for local consumption continued. The sale of the camelback to neighbouring countries ceased, however, when most of the tyre retreaders began to produce their own camelback. It is now considered to resume the manufacture of contact adhesive which is consumed in large quantities by the furniture and shoe industries.

CONCLUSIONS AND RECOMMENDATIONS

A. Conclusions

The Togolese staff has received adequate training in all aspects of the manufacturing process of the rubber articles that are currently being produced and of those which have been produced on a trial basis. By this time some of them can work independently while others work with minimum supervision.

Cycle tyres which have become the mainstay of the industry are selling well in the country and also in Ghana and Nigeria. The manufacture of cycle tubes is a promising proposition. The staff has been trained and has acquired a working knowledge in the production of tubes, which could be put to use as soon as GENERALATEX has received the necessary facilities for the mass production of the tubes.

The importation of tyres into Togo has an impact on the business. Improvement of the quality of tyres has been a priority to maintain and improve the competitiveness of GENERALATEX. The eventual setting-up of a quality control system will be of great help in this direction.

B. Recommendations

Raw materials and spares

GENERALATEX has experienced occasional shut-downs resulting from shortages of raw materials and lack of spare parts. These incidents invited complaints from the customers, lowered the workers' morale and caused loss of business. Difficulties in the production and variations in the quality of the finished products are also experienced during periods when local raw material sources are resorted to.

It is therefore recommended to reinforce the staff by mechanics and electricians who will be able to maintain and repair machines and equipment and to establish a sound budgetary system in order to overcome the problem connected with the raw material supply.

Staff

Assistants or at least one assistant with sufficient technical background should be employed to assist the General Manager of GENERALATEX who is at present the only one having a working knowledge of rubber compounding.

Since the efficiency is affected by the discipline and morale of the workers, new workers should be selected more carefully. In addition the company should develop staff rules and policies and the workers should be educated along these lines. Drugs, safety devices and better sanitary facilities should be provided to safeguard the workers' health.

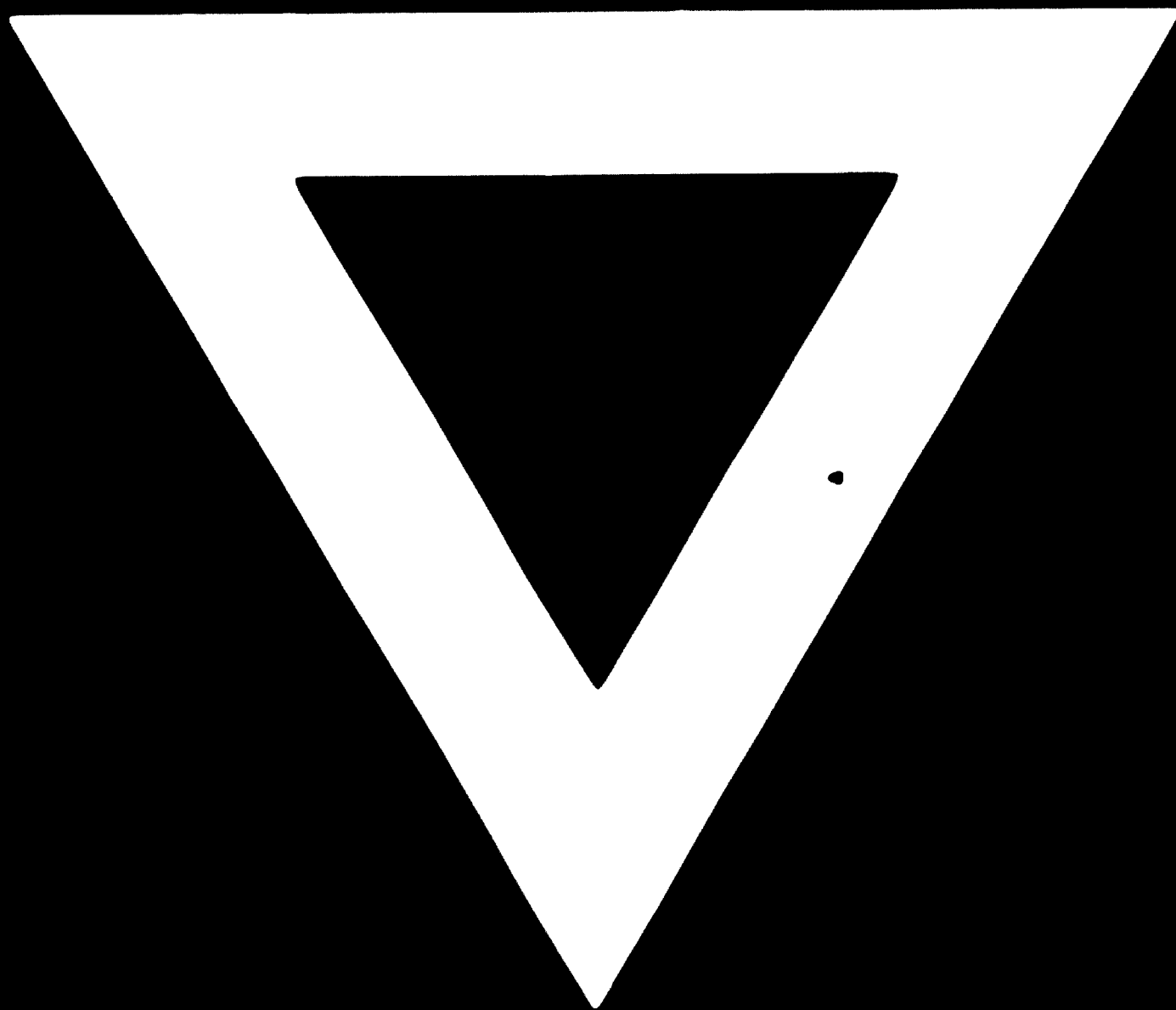
Facilities

The improvement of the existing facilities as well as the addition of the following machines and equipment are necessary to enable GENERALATEX to further improve its products and start its programme of product diversification:

- Additional mixing mill of higher capacity .
- Calender for rubberizing nylon tyre cord
- Calender for profiling tyre covers, sidewall strips etc.
- Extruding machine for inner tubes, air bags etc.
- Air bag splicing machine
- Inner tube splicing machine
- Sidewall assembly machine
- Automatic tube presses
- Moulds for soling materials, mats etc.
- Steam boiler of sufficient capacity
- Contact adhesive mixer
- Moulds for additional sizes of cycle tyres



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